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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,678	09/15/2003	John P. Troup	N-326663A/USN	1877

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EXAMINER	
HA, JULIE	

ART UNIT	PAPER NUMBER
1654	

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05/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/662,678	TROUP ET AL.	
	Examiner	Art Unit	
	JULIE HA	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *6,12 and 18-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 7-11, 13-17 and 23-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Amendment after Non-final filed on February 11, 2008 is acknowledged. New claims 23-29 have been added. Claims 1-29 are pending in this application. Applicant elected Group I (claims 1-17) and elected species methionine for amino acid, EPA for n-3 polyunsaturated fatty acids, and tocopherol for vitamin E component in the reply filed October 04, 2007. The requirement was deemed proper and made FINAL in the previous office action. Claims 6, 12 and 18-22 remain withdrawn from further consideration. Claims 1-5, 7-11, 13-17 and 23-29 are examined on the merits in this office action.

Withdrawn Objections

1. Objection to the title is hereby withdrawn due to Applicant's amendment of title to "Methods and Compositions for Promoting Muscle Protein Synthesis."

2. Objection to the specification is hereby withdrawn due to Applicant's amendment to the specification.

3. Rejections under 35 U.S.C. 112, 2nd paragraph, as being indefinite, are hereby withdrawn due to Applicant's arguments and amendment to the claims.

Maintained Rejection

35 U.S.C. 112, 1st

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to

which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 17 and 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The MPEP states that the purpose of the written description requirement is to ensure that the inventor had possession, as of the filing date of the application, of the specific subject matter later claimed by him. The courts have stated:

"To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood, 107 F.3d at 1572, 41 USPQ2d at 1966." Regents of the University of California v. Eli Lilly & Co., 43 USPQ2d 1398.

6. The MPEP lists factors that can be used to determine if sufficient evidence of possession has been furnished in the disclosure of the Application. These include "level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention. Disclosure of any combination of such identifying characteristics that distinguish the claimed invention from other materials and would lead one of skill in the art to the conclusion that the applicant was in possession of the claimed species is sufficient." MPEP 2163.

7. Further, for a broad generic claim, the specification must provide adequate written description to identify the genus of the claim. In Regents of the University of California v. Eli Lilly & Co., the court stated:

"A written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials. Fiers, 984 F.2d at 1171, 25 USPQ2d at 1606; *In re Smythe*, 480 F.2d 1376, 1383, 178 USPQ 279, 284-85 (CCPA 1973) ("In other cases, particularly but not necessarily, chemical cases, where there is unpredictability in performance of certain species or subcombinations other than those specifically enumerated, one skilled in the art may be found not to have been placed in possession of a genus. . . ."). Regents of the University of California v. Eli Lilly & Co., 43 USPQ2d 1398.

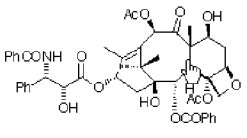
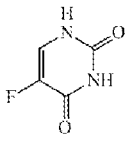
8. The MPEP further states that if a biomolecule is described only by a functional characteristic, without any disclosed correlation between function and structure of the sequence, it is "not sufficient characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence." MPEP 2163. The MPEP does state that for generic claim the genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. MPEP 2163. If the genus has a substantial variance, the disclosure must describe a sufficient variety of species to reflect the variation within that genus. See MPEP 2163. Although the MPEP does not define what constitute a sufficient number of representative, the Courts have indicated what do not constitute a representative number species to adequately describe a broad generic. In Gostelli, the Court determined that the disclosure of two chemical compounds within a subgenus did not describe that subgenus. *In re Gostelli*, 872 F.2d at 1012, 10 USPQ2d at 1618.

9. In the instant case, the claims are drawn to a kit comprising, 1) at least one essential and, optionally, conditionally essential amino acids in free from and/or salt

form, and 2) intact protein, wherein total essential and optionally, conditionally essential amino acids are present in an amount of about 55% to about 75% by weight based on the weight of total amino acids, and b) second composition comprising an anti-cancer drug. The generic statement anti-cancer drug does not provide ample written description for the compounds since the claims do not describe a single structural feature. The specification does not clearly define or provide examples of what qualify as compounds of the claimed invention.

10. As stated earlier, the MPEP states that written description for a genus can be achieved by a representative number of species within a broad generic. It is unquestionable claims 17 and 28 are broad generics with respect all possible compounds encompassed by the claims. The possible structural variations are limitless to any class of peptide or a peptide-like molecule or any compound that can function as an anti-cancer agent. It must not be forgotten that the MPEP states that if a peptide is described only by a functional characteristic, without any disclosed correlation between function and structure of the sequence, it is "not sufficient characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence." MPEP 2163. Here, though the claims may recite some functional characteristics, the claims lack written description because there is no disclosure of a correlation between function and structure of the compounds beyond compounds disclosed in the examples in the specification. Moreover, the specification lack sufficient variety of species to reflect this variance in the genus since the specification does not provide any examples of derivatives. The specification is void of organic molecules that

functions as a peptide-like molecule that qualify for the functional characteristics claimed as a peptide or a peptide-like molecule or other peptidic molecules and other synthetic peptide or peptide-like molecule that can function as an anti-cancer agent.

11. The specification discloses that the invention may be combined with anti-cancer drugs, such as 5-fluorouracil, mitomycin-C, adriamycin, chloroethyl nitrosureas and methotrexate (see paragraph [0077]). The specification does not disclose any peptide anti-cancer drugs, such as enzyme L-asparaginase and any other antibiotics and small molecules other than 5-fluorouracil, methotrexate and others. Description of 5-fluorouracil, mitomycin-C, adriamycin, chloroethyl nitrosureas and methotrexate is not enough to encompass numerous other peptides, proteins, and small molecules that belong to the same genus, anti-cancer drugs. For example, there are varying lengths, varying amino acid compositions, and numerous distinct qualities that make up the genus. Since an intact protein can be made up of any amino acid sequences, there are vast numbers of possibilities. Additionally, there are innumerable possible anti-cancer drugs that are made up of amino acids, small molecules, amino acid and peptide mimetics and so on. These anti-cancer drugs do not share any core structures. For example, taxol has a structure  and 5-fluorouracil has the structure  . These two agent having the same function do not share any core structures.

Therefore, there is not sufficient amount of examples provided to encompass the numerous characteristics of the whole genus claimed.

12. The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See *In re Wilder*, 736 F.2d 1516, 1521, 222 USPQ 369, 372-73 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate"). Accordingly, it is deemed that the specification fails to provide adequate written description for the genus of the claims and does not reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the entire scope of the claimed invention.

Response to Applicant's Arguments

13. Applicant argues that "claims 3 and 17 have been amended and Applicant has added new dependent claim 27, drawn to the kit of claim 17, wherein the anticancer drug is 5-flurouracil, mitomycin-C, adriamycin, chloroethyl nitrosureas or methotrexate."

14. Applicant's arguments have been fully considered but have not been found persuasive because Applicant's are not in possession of the whole genus of anti-cancer drugs. Claim 29 is dependent on claim 17, not claim 27. Additionally, claim 17 and new claim 28 added are drawn to ANY anti-cancer drug. The recitation of "an anti-cancer drug" is by it's functionality, and no structural information is provided in claims 17 and 28. Claim 29 is the only claim that recites what the anticancer drug is. Claims 17 and 28

are not dependent on claim 29. Therefore, the anticancer drug of claims 17 and 28 are any drug that has the functionality of anti-cancer drugs. Therefore, Applicant is not in possession of the entire genus of anti-cancer drugs at the time of filing of the application.

35 U.S.C. 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Madsen et al (US Patent No. 4,898,879).

17. Madsen et al teach nutritional compositions comprising L-leucine (about from 19.4 to 19.8%), L-isoleucine (16.2 to 16.4%), L-valine (14.5% to 14.8%), L-lysine (10.2% to 10.3%), L-methionine (1.1 to 1.2%) and so on (see column 3, lines 10-25). This reads on claims 23-24, since the composition comprises about 19.4 to 19.8% of leucine and about 1.1 to 1.2% methionine, and at least 19.8% is about at least 20%. The reference also teaches that the essential amino acids should comprise about from 60 to 75% by weight of the total amino acids in the composition (see column 3, lines 32-34).

Response to Applicant's Arguments

18. Applicant argues that "the new independent claims 23-24 correspond to the original claims 1 and 2 except that the new claims use a transitional language 'consisting essentially of' instead of 'comprising'".

19. Applicant's arguments have been fully considered but have not been found persuasive because Applicant has not defined what encompasses "consisting essentially of" in the specification. In fact, the instant specification does not define the phrase "consisting essentially of". The MPEP states the following: "A consisting essentially of' claim occupies a middle ground between closed claims that are written in a consisting of' format and fully open claims that are drafted in a comprising' format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998)…For the purposes of searching for and applying art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of' will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. Therefore, the claim was read as "comprising of" and therefore, the reference anticipates the instant claims 23-24.

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

20. Claims 3-5, 7, 25 and 27 are rejected under 35 U.S.C. 102(e) and (a) as being anticipated by Hageman et al (US Patent No. 6,420,342).

21. Hageman et al teach a nutritional, pharmaceutical or dietetic preparation can be manufactured in dry form, as bar, as powder, as tablet, and cookie or as cereal (see column 5, lines 60-63). The reference further teaches for products for sportsmen the following mixtures of amino acids appeared to be especially beneficial for muscle growth, when consumed in an amount of more than 2 and preferably more than 4 g per daily dose: 3-10 wt % histidine, 5-15 wt % isoleucine, 10-23% wt % leucine, 10-23 wt % lysine, 5-15 wt% methionine, 5-15 wt % phenylalanine, and 5-15 wt % threonine (see column 6, lines 59-67 and column 7, line 1). Furthermore, the reference teaches that when proteins are included in the nutritional preparations, the amount that is included depends on the application (see column 6, lines 39-41) and the proteins are proteins of dairy, vegetable or animal origin, such as skimmed milk powder, whey powder, egg white powder, potato protein, soy protein, etc., or hydrolysates, or mixtures thereof (see column 6, lines 27-32), meeting the limitations of claims 3-5, 7 and 25. The reference teaches that when proteins are included in the nutritional preparation, the amount that is included depends on the application of the product. In complete formulae typically an amount of 5-120 g per daily dose...for young infants the amount will be in the range 5-15 g per daily dose...in complete enteral nutrition for feeding surgery patients, typically 50-120 g per daily dose…In supplement typically 0-60 g protein per daily dose will be included (see column 6, lines 39-50). In regards to claim 25, the claim is drawn to "a composition consisting essentially of..." Applicant has not defined what encompasses

“consisting essentially of” in the specification. In fact, the instant specification does not define the phrase "consisting essentially of". The MPEP states the following: "A consisting essentially of' claim occupies a middle ground between closed claims that are written in a consisting of' format and fully open claims that are drafted in a comprising' format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998)…For the purposes of searching for and applying art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of' will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. Thus, claim 25 has been treated as “a composition comprising…”, the same claim language as original claim 3.

Response to Applicant’s Arguments

22. Applicant argues that "the claimed composition requires that it contains not only a certain percentage of essential amino acids, and optionally, conditionally essential amino acids and intact proteins, but also requires a particular ratio range of intact protein: leucine. Hageman’s sportsmen’s composition should contain no or little protein. This is definitely not the same for the claimed composition and is not set forth in amended claim and dependent claims 4-5.

23. Applicant’s arguments have been fully considered but have not been found persuasive because the prior art teaches the composition of instant claims. Hageman patent teaches that in supplements for sportsmen and persons that temporarily require

high protein requirements, up to 60 g of protein per daily dose can be included (see column 6, lines 48-53). The reference additionally teaches that when proteins are included in the nutritional preparation, the amount that is included depends on the application of the product. Additionally, the reference teaches that when relative large amounts of proteins or amino acids are included in the product, it is preferred to increase the amount of vitamin B6 in the product (see column 7, lines 3-5). Therefore, the composition would inherently have the ratio of protein:leucine of 10:1 or 1:10. In regards to claim 25, please see the rejection above in regards to "consisting essentially of" transition phrases. Furthermore, the instant claims recite "at least about" and "from about". Claims 3, 5, 7, 25 and 27 have been rejected over the prior art, even though the reference does not disclose exact % weight range or "ratio" as claimed. However, both the claims and the reference utilize the term "about" when discussing the % weight. The term "about" allows for some tolerance in the ranges disclosed. In *In re Ayers*, the Federal Circuit held that "at least about 10%" was anticipated by a reference that disclosed "about 8%" because the term "about" allowed for some tolerance. In re Ayers, 154 F.2d 182, 185 (Fed. Cir. 1946). Similarly, in Johnson and Johnson v. W.L. Gore & Associates, Inc., the Court allowed for "about 1.2" to be inclusive of 1.0. See Johnson and Johnson v. W.L. Gore & Associates, Inc., 436 F.Supp. 704, 728-729 (Fed. Cir. 1977). Although about has never been confined to specific percentage of variability, the Johnson and Johnson decision at least implies that 16% variability is permissible when "about" is used (1.0/1.2 = ~16.6% variability). Thus, the term "about" implicitly discloses some variability even though the specification may not literally cite

this variability. Thus, the disclosure of a weight % of "about" 5 to 15% etc. encompasses a % weight of "about" 55% to 75%, 0.5% to about 5% etc as claimed. Claims 3 and 25 recite, "optionally, at least one conditionally essential amino acid…"Since the conditionally essential amino acid is an optional component, the reference meets the limitations of instant claims.

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

24. Claims 3-4, 7-11, 15 and 26 are rejected under 35 U.S.C. 103(e) and (a) as being unpatentable over Abbruzzese et al (US Patent No. 6,387,883).

25. Abbruzzese et al teach nutritional compositions for the prevention and treatment of cachexia and anorexia, comprising effective amounts of omega-3 fatty acids (LNA, DPA, DHA and so on); branched-chain amino acids valine, leucine, isoleucine or mixtures thereof; and antioxidant system selected from beta-carotene, vitamin C, vitamin E, selenium, or mixtures thereof (see abstract). The reference teaches that the total amount of branched-chain amino acids (BCAA) useful is about 15-50g/100g protein, and would contain up to about 8 g BCAAs per 16 g of total protein. The daily delivery of BCAA is about 5-26 g (see column 9, lines 26-29). This reads on claims 3-4. The reference teaches that leucine in the amount of 9.08 g and methionine in the

amount of 2.78 g per 100 g of protein (see column 9, lines 5-25, or Table 4). Since there is about 10 g of leucine to 100 g of protein, there is about 1:10 ratio of leucine to protein, meeting the limitation of claim 3(b). Therefore, the reference further meets the limitation of claims 3-4, 7, 15 and 26. The reference teaches that EPA is in the amount of 1.09 g and DHA is in the amount of 0.46 g (see Table 3). This reads on claims 8-10. Furthermore, the reference teaches the d-alpha-tocopherol (vitamin E, IU) in the amount of 300.00 Qty/Liter (see Table 6) or 10.65 kg (Table 11). The reference further teaches that composition to treat ulcerative colitis include a protein source that can be intact or hydrolyzed proteins of high biological value (see column 3, lines 7-9) and teaches 75% whey protein concentrate as one of the ingredients (see Table 7). This read on claim 3 in part.

Response to Applicant's Arguments

26. Applicant argues that "the presently-claimed compositions, as set forth in amended claim 3, as well as the claims that depend therefrom, are distinct from that of Abbruzzese because: 1) the amount of total amino acids of the present invention is higher than that of Abbruzzese, i.e. from about 55% to about 75% by weight based on the weight of total amino acids versus Abbruzzese's 50% of BCAAs by weight based on the weight of total protein: and (2) the ratio of the intact protein leucine is completely different from that of Abbruzzese. The claimed invention has a range from about 10:1 to about 1:10 whereas, in Abbruzzese, the level of intact protein is definitely over 1,000 fold higher than the level of leucine."

27. Applicant's arguments have been fully considered but have not been found persuasive because the reference anticipates instant claims. For example, Abbruzzese teaches that BCAA useful is about 15-50g/100 g protein. Again, both the instant claims and the reference utilize the term "about" when discussing the weight (% weight). The term "about" allows for some tolerance in the ranges disclosed. In *In re Ayers*, the Federal Circuit held that "at least about 10%" was anticipated by a reference that disclosed "about 8%" because the term "about" allowed for some tolerance. In re Ayers, 154 F.2d 182, 185 (Fed. Cir. 1946). Similarly, in Johnson and Johnson v. W.L. Gore & Associates, Inc., the Court allowed for "about 1.2" to be inclusive of 1.0. See Johnson and Johnson v. W.L. Gore & Associates, Inc., 436 F.Supp. 704, 728-729 (Fed. Cir. 1977). Although about has never been confined to specific percentage of variability, the Johnson and Johnson decision at least implies that 16% variability is permissible when "about" is used (1.0/1.2 = ~16.6% variability). Thus, the term "about" implicitly discloses some variability even though the specification may not literally cite this variability. Thus, the disclosure of a weight % of "about" 15-50g/100g of protein. encompasses a % weight of "about" 55% to 75% claimed. Furthermore, the reference teaches that the amount of each amino acid is in g/100g of protein. This implies that when you increase the amount of the "intact" protein, than you would increase the amount of each amino acids accordingly. For example, if there was 1000 g of intact protein than the amount of leucine would also increase to 90.8 g. Therefore, the ratio of intact protein to leucine would be 11:1, this is about 10:1. Claim 3 recites, "optionally, at

least one conditionally essential amino acid…" Since the conditionally essential amino acid is an optional component, the reference meets the limitations of instant claims.

Revised Rejection

35 U.S.C. 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

29. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

30. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

31. Claims 13-14 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Abbruzzese et al (US Patent No. 6,387,883) as applied to claims 3-4, 7-11, 15 and 26 above.

32. The teachings of Abbruzzese et al are described, supra. The difference between the reference and the instant claims are that the reference does not teach tocopherol in an amount of about 50 mg per serving or at least 150 mg per daily dose, amino acids in 6 g to about 18 g in free and/or salt form per daily dose, and 6 g to about 21 g total essential and/or conditionally essential amino acid per serving.

33. However, it would have been obvious to one of ordinary skill in the art to optimize the conditions of Abbruzzese et al to produce a nutritional composition comprising essential and non-essential amino acids and PUFA such as EPA, since the prior art teaches nutritional composition for treating cancer cachexia. There is a reasonable expectation of success, since "it is the normal desire of scientist or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is optimum combination of percentages". The MPEP states: Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. *"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."* In re Aller, *220 F.2d 454, 456,*

105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("*The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.*"); *In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969)* (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Therefore, there is a reasonable expectation of success to optimize the concentrations of the tocopherol and essential amino acid concentrations, since it is "the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" and one of ordinary skill in the art would experiment with different concentrations to produce the optimal product. From the teachings of the references, it is apparent that one of the ordinary skills in the art would

have had a reasonable expectation of success in producing the claimed invention. Thus, the invention as a whole is *prima facie* obvious over the references, especially in the absence of evidence to the contrary.

34. (Necessitated by amendment) Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madsen et al (US Patent No. 4,898,879).

35. Madsen et al teach nutritional compositions comprising L-leucine (about from 19.4 to 19.8%), L-isoleucine (16.2 to 16.4%), L-valine (14.5% to 14.8%), L-lysine (10.2% to 10.3%), L-methionine (1.1 to 1.2%) and so on (see column 3, lines 10-25). This reads on claims 23-24, since the composition comprises about 19.4 to 19.8% of leucine and about 1.1 to 1.2% methionine, and at least 19.8% is about at least 20%. The reference also teaches that the essential amino acids should comprise about from 60 to 75% by weight of the total amino acids in the composition (see column 3, lines 32-34). The difference between the reference and the instant claims is that the reference does not teach that leucine is present in an amount of at least 25% to about 95% by weight or at least 25% to about 35% by weight based on the total amino acids.

36. However, it would have been obvious to one of ordinary skill in the art to optimize the conditions of Madsen et al to produce a nutritional composition comprising essential and non-essential amino acids, since the prior art teaches nutritional composition for treating different disorders. There is a reasonable expectation of success, since “it is the normal desire of scientist or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is

optimum combination of percentages". The MPEP states: Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. *"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."* *In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)* (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("*The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.*"); *In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969)* (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Therefore, there is a reasonable expectation of success to optimize the concentrations of the tocopherol and essential amino acid

concentrations, since it is "the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" and one of ordinary skill in the art would experiment with different concentrations to produce the optimal product. From the teachings of the references, it is apparent that one of the ordinary skills in the art would have had a reasonable expectation of success in producing the claimed invention. Thus, the invention as a whole is *prima facie* obvious over the references, especially in the absence of evidence to the contrary.

New Rejection

35 U.S.C. 112, 2nd

37. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

38. Claims 3 and 25 recite the limitation "the ratio of the intact protein to leucine in free form and/or salt form" in claims 3(b) and claim 25(b) . There is insufficient antecedent basis for this limitation in the claim. Claim 3 recites, "A composition comprising a) at least one essential amino acid...selected from the group consisting of isoleucine, lysine, methionine, phenylalanine, threonine, tryptophan, valine, or histidine and, optionally, at least one conditionally essential amino acid selected from the group consisting of tyrosine, cysteine, arginine and glutamine." The amino acid leucine is not listed as one of essential or conditionally essential amino acids. Furthermore, "the" ratio of intact protein to leucine is first mentioned in claim 3(b) and 25(b). Therefore, claim

3(b) lacks antecedent basis in regards to "the ratio of the intact protein to leucine". Same reasoning applies to claim 25(b) in regards to "the ratio of the intact protein to leucine".

35 U.S.C. 103

39. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

40. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

41. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

42. Claims 17, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hageman et al (US Patent No. 6,420,342) in view of Salvati et al (US Patent No. 6,953,679).

43. The teachings of Hageman et al are described above. The reference further teaches that the nutritional composition has utility in treating cancer (see abstract). The difference between the reference and the instant claims is that the reference does not teach a kit or an anti-cancer drug.

44. However, Salvati et al teach a fused cyclic compound and the use of the fused cyclic compound with a nutritional supplements in combination with whey protein or casein, amino acids (such as leucine, branched amino acid and hydroxymethylbutyrate), triglycerides, vitamins (e.g., A, B6, B12, folate, C, D, and E), minerals, etc (see column 45, lines 48-56). Furthermore, the reference teaches anti-proliferative agents for use in combination with the compounds such as adriamycin (see column 45, lines 41-43) and anti-cancer agents, such as methotrexate, 5-fluorouracil (see column 46, lines 64-67). The reference teaches a kit comprising a first container (such as a vial) containing a pharmaceutical formulation comprising a compound, a second container (such as a vial) containing a pharmaceutical formulation comprising one or more agents to be used in combination with the compound of the invention (see 47, lines 55-64).

45. Therefore, it would have been obvious for one of ordinary skill in the art to combine the teachings of Hageman et al and Salvati et al to produce a kit comprising the anti-cancer agent with the nutritional composition, since Salvati et al teach a kit comprising fused cyclic compound, nutritional supplement comprising leucine, whey and protein and any anti-cancer agent and Hageman et al teach the nutritional composition. One of ordinary skill in the art would be motivated to combine, since Salvati et al teaches such a composition/kit. There is a reasonable expectation of success, since Salvati et al teach a kit that can comprise any agent, nutritional supplement for the treatment of cancer (prostate), and Hageman et al teach a nutritional supplement that is useful in treating variety of diseases, including cancer. Please note that claim 28 recites “consisting essentially of”. As described above, Applicant has not defined what encompasses “consisting essentially of” in the specification. In fact, the instant specification does not define the phrase "consisting essentially of". The MPEP states the following: "A consisting essentially of' claim occupies a middle ground between closed claims that are written in a consisting of' format and fully open claims that are drafted in a comprising' format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998)…For the purposes of searching for and applying art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of' will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355.

Conclusion

46. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JULIE HA whose telephone number is (571)272-5982. The examiner can normally be reached on Mon-Thurs, 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. H./
Examiner, Art Unit 1654

/Anish Gupta/
Primary Examiner, Art Unit 1654